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Nanoparticles Found in Many Foods Could Wreak Havoc With Your Gut Microbiome

A Cornell University study published in Antioxidants provided more evidence that titanium, silicon, zinc and iron nanoparticles present in many foods and supplements may cause serious disturbances to intestinal health and function, and to the gut microbiome.

By **Rob Verkerk Ph.D.**

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If anyone tried to convince you that size isn't important, let them know that sometimes it is. Especially when it comes to the size of things we consume or inject into our bodies.

Remember the lipid nanoparticles used to carry mRNA "vaccine" cargo into our cells?

Well, it turns out that some metal compounds, like zinc or iron oxide that are used as sources of zinc and iron in cheap food supplements, may damage the mucosal lining, increase the permeability of our guts and disrupt gut microbial communities when delivered as nanoparticles.

Worse than that, nanoparticles of titanium and silicon dioxide, especially the former, could be more harmful still.

A study out of Cornell University published in the journal Antioxidants in February has provided more evidence that titanium, silicon, zinc and iron nanoparticles present in many foods and supplements have the potential to cause serious disturbances to intestinal health and function, as well as to microbial populations within the gut (microbiome).

What's particularly interesting is that three out of four of the forms of metals (iron and zinc) or metalloids (silicon) studied, excluding titanium, are widely recognized as nutritionally essential trace elements for human health.

Yet there is an emerging picture that shows the combination of the chemical form (all forms in the latest Cornell study were oxides) — and the size and distribution of particles of these metallic or metalloid compounds (all of which were dispersed nanoparticles, being between one and 100 nanometers in size i.e. one to 100 billionth of a meter in size), can create profoundly different biological effects.

Are all metallic nanoparticles unsafe?

The science of nanoparticle interactions in biological systems is extremely complex and is only partially understood. There is a widely held view, one increasingly upheld by regulatory authorities, that the smaller the particle, the more of a safety concern it is likely to be. This is a gross generalization and can be incorrect.

A more accurate generalization is as follows: the physical, chemical and biological properties of a nano-scale element or compound are typically different from those of the same element or compound when compared with its presentation in a larger size range.

Taking this notion a little further, the science also suggests that if the particle in question is intrinsically safe and beneficial to the human body, the very tiny, nano-sized particles of that element or compound may deliver more rapid or beneficial effects on health compared with the same element or compound in its non-nano form. That means it might be especially useful for someone with a health challenge.

This is because the nanoscale of the particles facilitates entry into target tissues and cells, via mucosal barriers and cell membranes, to a greater extent than larger particles or agglomerations (atomic or molecular clusters) of the same element or compound.

Conversely, that's why, if the particle is intrinsically unsafe, it might give rise to greater health concerns or risks.

Another generalization that's emerging from the extensive work on so-called engineered nanoparticles reveals that when technological processes are applied to elemental particles or compounds, such as through the application of coatings, their physical, chemical and biological properties can also change, sometimes quite dramatically, creating legitimate health and environmental concerns.

Findings from the Cornell study

The four metal or metalloid nanoparticles selected for the study are widely distributed in the food supply, being used, in particular, as technological food additives in the food industry, as anti-caking, coloring or whitening agents (e.g. in table salt), as well as in some low-cost nutritional supplements (e.g. Centrum multivitamin and mineral supplements, fig. 1).

***Figure 1.** Centrum Advance 50+ Multivitamin & Mineral Tablets (U.K. and Ireland) — with zinc oxide, silicon dioxide (E 551) and titanium dioxide (E 171) highlighted, these being three of four of the chemical compounds that were subject to the Cornell study. Important note: The size of the particles present in this product is unknown and may or may not be in the nano-scale. Magnesium oxide is another metal oxide in the Centrum product, but this was not included in the Cornell study.*

The Cornell study carried out in collaboration with Binghamton University (in the state of New York), was an animal study involving an increasingly well-recognized in vivo model using chickens.

The study type offers relatively fast and low-cost screening of nanoparticles that might cause disturbances to the gut lining or gut-based microbial communities.

The characterized food-grade nanoparticles were injected, following sonication to ensure dispersal (non-clustering), into the amniotic fluid of the eggs, which was in turn consumed by the developing embryos.

On hatching, the chickens were euthanized, dissected and specific tissues were frozen to preserve them and subsequently sectioned and prepared for extensive testing and analysis.

The amounts and forms of the titanium, silicon, iron and zinc oxide nanoparticles were selected to be approximately representative of the amounts to which humans would be exposed when consuming food additives or supplements based on these metal or metalloid compounds.

The key findings for some, or all, of the four nanoparticles studied can be summarized as follows:

- The nanoparticles impacted intestinal development in chicks.
- The surface area of the intestinal lining was altered by exposure, reducing the length of villi/depth of crypts, so reducing the potential for nutrient absorption.
- The nanoparticles, compared with controls, induced changes in the production of mucin that forms the mucosal layer of the intestinal lining, reducing its potential as an appropriate habitat for commensal bacteria and other microorganisms, as well as its protective role as a barrier to pathogens and harmful chemicals.
- The nanoparticles had a negative impact on gut microbial communities, notably beneficial Bifidobacterium and Lacticaseibacillus bacteria.

What does the study mean to us?

While we can't be certain that all findings from the Cornell study apply directly to humans, the study is yet another that suggests that there may well be health concerns with technological additives or excipients commonly used by the food and nutritional industries — as well as the pharmaceutical industry.

We have evolved over millennia with exposure to metals and metalloid compounds, these being vital to a very wide array of functions, from immune health to collagen formation, oxygen transport in blood, neurotransmitter function, enzyme activity, detoxification — almost every metabolic and physiological system operating on the body.

We cannot always directly transfer results from an experimental model, such as the in vivo chicken model used by the Cornell group, to human health and our dietary exposures.

But at the same time, there is increasing evidence that in vivo (living organism) based models like the one used in the Cornell study, rather than in vitro ("test tube") ones, are useful surrogates for what happens in the real world.

We ignore what Paracelsus taught us some 500 years ago at our peril: it's the dose that makes the poison. Therefore, minimizing the amounts of frequency of exposure to technological additives of any form is a very good starting point.

More than this, if we know that the product in question poses a potential health risk in its non-nano form when it is delivered in nano form, it may well present an even greater risk to our health.

This principle is particularly applicable to titanium dioxide which, according to its non-nutritional and toxicological properties, is quite distinct from the oxides or dioxides of silicon, iron or zinc, all of which have well-understood nutritional roles.

Then again, these oxidized forms are also known to not be the most effective or safest forms of these nutritional elements.

Other salts, compounds or chelates have been found through extensive research over many decades to be both safer and more effective. Hence their use in higher-quality nutritional supplements.

Titanium dioxide — the bad egg in the basket

Concerns over the safety of titanium dioxide have been gathering over recent years, with the EU and Northern Ireland imposing a ban on the compound effective as of Feb. 7, 2022, this ban having been rejected by England, Wales or Scotland, one of the first signs of post-Brexit non-EU conformity in the nutritional sector, albeit not the example we had necessarily been hoping for!

The safety concerns have been greatest with respect to inhalation risks of titanium dioxide, especially following its classification by the International Agency for Research on Cancer as a potential human carcinogen.

In a landmark decision in November 2022, the European court annulled the European Commission's "Delegated Regulation of 2019 in so far as it concerns the harmonised classification and labelling of titanium dioxide as a carcinogenic substance by inhalation in certain powder forms" that was in turn informed by an earlier decision again titanium dioxide by the French government.

The court's decision was based on its finding of "manifest errors of assessment and infringement of the criteria established for harmonised classification and labelling under Regulation No 1272/2008."

The French government has recently announced its decision to appeal the European court's decision.

This ongoing battle over titanium dioxide's safety, or otherwise, complicates an already complex and poorly understood area of science.

It potentially raises questions over whether the precautionary principle approach taken by the European Commission may result in overreach by the national regulators in the EU.

The fact that the Commission's decision was annulled by the European court also reminds us of the power of the nanoparticle lobby that comes with the backing of Big Pharma and Big Food.

There's a lot at stake if the carcinogen label for titanium dioxide sticks. The titanium dioxide industry continues to grow at around 6% year on year and was valued at 17.19 billion USD in 2020.

It is a very widely used excipient (technological additive) in pharmaceutical products and Big Pharma won't want a "potential carcinogen" classification hanging around its neck given the potential for downstream litigation.

One can presume if the concerns are restricted to inhalation exposure, Big Pharma might be prepared to live with it.

But risks with developmental or intestinal damage or dysbiosis from oral exposure have quite different implications.

Clearly, the Cornell study in question, and another from 2022 published in the journal Food and Chemical Toxicology suggesting genotoxicity (DNA damage) in human intestinal cells, will make uneasy reading for Big Pharma.

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Best Newest Oldest

Carrie Lavine
5 days ago edited

Dr Ana Maria Milhacia &scientists of La Quinta Columna are using EDTA Chelation to decontaminate blood from synthetic nanotech hydrogel AI structures also in unvaccinated blood..a form of Morgellons discovered sbout a decade ago-scientists verify is linked to Geoengineering DoD deployment of heavy metal nano particulates..&the Graphene Oxide nano-structures via the kill shots.These scientists verify U.S.documents released verify Graphene oxide in the Covid19 bioweapon shots.We need to help We The People understand..though this info is gruesome&like a horror story-its real&a product of antihuman weaponization of technology..and must be openly Exposed&Banned.La Quinta scientists are working to help humanity using their own funds.

12 1 Reply • Share ›

Ricky Ricardo → Carrie Lavine
5 days ago

I've stated many times that we are being poisoned from every direction. People really should take me seriously.

4 0 Reply • Share ›

Tina → Carrie Lavine
5 days ago

Dr. Ryan Cole states unequivocally that there is no graphene oxide in the Covid 19 injection. It is a video on The Highwire website. I don't know about other scientists, but I have seen him lecture in person and he's a pathologist who studies the injection extensively in human tissue. If he says it's not there, it's not there.

2 3 Reply • Share ›

BURYWEYMIER48 → Tina
2 days ago

The bottom line is that we all need to go organic, really watch ingredients and eat as wholesome as we can, including meat - buy from local farms as much as possible and grow as much of your own food as you can.

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Leslie Taylor → Tina
4 days ago edited

Graphene Oxide is the most highly thermally conductive substance known. If it is present in significant quantities in corpses of people who have been vaccinated and boosted by covid vaccines, would they not more efficiently incinerate and this would be apparent to crematers of their corpses? Or the living via a direct energy weapon? How that for cheery questions? Believe me, I'm no biophysicist, just a logical question. Two reports on the presence of GO in vaccines:

Science Direct: Acta Biomaterialia Volume 112, August 2020, Pages 14-28 Recent progress of graphene oxide as a potential vaccine carrier and adjuvant.
https://www.sciencedirect.c...

"Graphene oxide (GO), widely employed for the delivery of biomolecules, excels in loading and delivering antigen and shows the potentiality of activating the immune system. However, GO aggregates in biological liquid and induces cell death, and it also exhibits poor biosolubility and biocompatibility. To address these limitations, various surface

see more

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Voyt Regnal → Tina
5 days ago edited

While we all know how harmful are genome transfecting 'vaccines', the graphen oxide story, that has been circulating since the start of covid jabs is a total baloney. Thanks for pointing at it because graphen paranoia runs deep among many people.

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krofter → Voyt Regnal
4 days ago

Pfizer documents recently released by the FDA prove graphene oxide is used to make the Pfizer jabs.
https://secularheretic.subs...

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1digger → Tina
a day ago edited

Graphene oxide is in the jabs; Dr. Robert Young showed screen shots of Pfizer documents listing Graphene oxide in some of the recent release under FOIA. https://rumble.com/v2i83y2-...

While I appreciate Dr. Cole in many ways regarding the jabs, he's off base on G.O.

Furthermore, Dr. Young found that 'all' 4 'vaccines' contained G.O. This from 2021: https://www.drrobertyoung.c...

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Aurora Nite → Tina
a day ago

I too follow and respect Dr. Cole. Throughout this Covidcaust he has provided much wisdom and clarity of understanding for many. However I've learned to suspend absolutes stated by any medical professional with this Biopharma cartel product. There are many examples that challenge his GO theory.

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Sabrina Balsky → Tina
2 days ago

that is contradicted by the patents graphene is in there Karen kingston shows it

0 0 Reply • Share ›

Deirdre I Hobson → Tina
2 days ago

I have much regard for Dr Ryan Cole who showed his courage and took action about the same time as La Quinta Columna did, who are to also be held in the same esteem. They were an early group re showing proof of the Nanotechnology being seen in the bloods of the jabbed.

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Ricky Ricardo
5 days ago

NEVER buy Jamieson or Centrum supplements! They are 100% Big Pharma! If you buy supplements, always pay attention to the "non-medicinal ingredients" - and know what you're reading!

7 0 Reply • Share ›

oreocracker → Ricky Ricardo
2 days ago

I recall Dr Gary Null saying afew years back that All supplements are made by 4 major pharma companies. I never researched beyond that.

0 0 Reply • Share ›

Andrea Mercier
4 days ago

I really hate to add more information than is already written here......but unfortunately these oxides are also in Beauty products too.

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Susan → Andrea Mercier
2 days ago

Why the rise of beauty bloggers and influencers. Poor girls.

1 0 Reply • Share ›

BChristine
5 days ago edited

Anyone who takes anything even *remotely* similar to the label shown in this article is out of their minds ... I take a few supplements myself, but always do my research first on the manufacturer; get a CoA (Certificate of Analysis), and thoroughly read the label. The concoction of chemicals and additives on this label completely defeats the purpose of taking it.

4 0 Reply • Share ›

Isthisthingon → BChristine
2 days ago

All ingredients should be derived from food and should compliment an informed diet... unfortunately, most soil is completely depleted of the vital nutrients/minerals needed and supplementation is a must of key/vital nutrients especially in areas that are known to be void of essentials like Selenium-as Selenium deficiency is responsible for a myriad of issues to do with skeletal development. Scoliosis comes to mind. Anything advertised in the mainstream, I simply consider poison until proven otherwise! Especially in this PSYOP!

In the book 'Rare Earths, Forbidden Cures', which is full of news articles from obituaries and medical journals and even police reports of people who have done horrible things to other people, this book lists all the ways the various people involved were/are deficient in key/vital nutrients/minerals/fats, etc. We all need the 80+ minerals, essential amino acids along with extra amounts of aminos like L-tyrosine, glycine, taurine, and others, and with the 3 essential fatty acids, every single day! We have to supplement! We need to stop trying to get any of these nutrients from the Federally Funded Fortification Cartel. We all know the damaged being caused to us is on purpose, because we simply can't be this stupid in the 21st Century! Most are simply getting sicker and sicker and now are just dropping

see more

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Suzanne Giuriati Cerny → BChristine
2 days ago

I know of a woman who took the vaccine the day it came out. The result is that when she became pregnant twice in two years she miscarried. I did some research on that fact, but there is none. No research on vaccines causing miscarriage in pregnancy. She has one healthy 7 year old. There were no vaccines at that time for Covid.

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Carrie Lavine
5 days ago edited

Richard Delgado of La Quinta Columna in an interview abridged by Henry Makow describes the pre-meditated poisoning of humanity by Graphene Oxide-&that what is called spike proteins is really..the interaction of biology with reduced graphene oxide that causes a protein bio-molecular crown to be formed by.human cells fighting this foreign matter.Delgado states this was all for the purpose of theTranshumanisn of human beings in a fast amount of time..in essence to.proclaim human beings r thereby altered into something else.(This KMcabal &who knows mayb working with the demonic element ..of alien beings&technologies-whatever..it must be openly exposed..&i think..the ppl are ready to hear the entire monstrosity of this bio-terrorism..their ready for the fake alien invasion..&need 2 know the real one in weaponizing our biology&can comprehend the nature of this war against humanity.

6 1 Reply • Share ›

Ricky Ricardo → Carrie Lavine
5 days ago

I've mentioned that the nanobot shots were basically preparing "humanity" for Transhumanism. It seems to be the first step in their nefarious agenda. They are in fact, Gene Editing shots. It just fits!

2 0 Reply • Share ›

Voyt Regnal → Carrie Lavine
5 days ago

old story - a total bummer .

0 0 Reply • Share ›

Janet
2 days ago

My son just had tooth fillings with a resin made from nano particles of silicon OXIDE (not dioxide). Admira Fusion.
The company claims the nano particles stay in the matrix of the material, and then it is quickly cured with a UV light so they wouldn't escape. They also claim nano sized silicon oxide particles are found in nature in insect exoskeletons.

I hope the fillings aren't dangerous!
It seemed like the best option given four choices-- 1. resin from plastics/BPA, 2. mercury amalgam, 3. metal crowns that leached nickel, 4. crowns from zircona (more invasive, more products and partial root canal)

1 0 Reply • Share ›

Beckie
2 days ago

Cornell not checking magnesium oxide, given its common use as a supplement, was really dumb.

1 0 Reply • Share ›

EveningLily
5 days ago

The university referenced is Binghamton (not Binghampton).

1 0 Reply • Share ›

Rob DF
2 days ago

"Yet there is an emerging picture that shows ... the size and distribution of particles ... can create profoundly different biological effects.". Not sure why this is "emerging" the basic physics of this have been know for a long time. Think of grain elevators and grain dust explosions: https://en.wikipedia.org/wi.... You wouldn't think of wheat as an explosive material but turn it into a fine powder and watch out! This applies to any physical substance, the size of the particle has profound effects on the properties of the material and how it interacts with it's surrounding environment.

0 0 Reply • Share ›

Gabriella Klein
2 days ago

The oncological medication oestrogen blocker I took contained titanium dioxide. I told the oncologist I would no longer take it because of its carcinogenic potential, but she simply had no idea. Not a clue. She recommended a different brand, but it contains four artificial colours, all carcinogenic, plus talc!

0 0 Reply • Share ›

Wendy Allen
2 days ago

Ti is in coating of some gum/nicotine gum/some dental implants/hip operation use etc.. not good since it is supposed to be a trace mineral not in high amounts in the brain/body.

0 0 Reply • Share ›

Voyt Regnal
5 days ago

oh boy..another scary story, first from Mercola about eating meat with mRNA, now from Verkerk. Plenty of 'can', 'potential', 'suggests', 'associated'..etc, if you read the original document.
What else? 🤪
Paranoia runs deep indeed. We will all be soon doomed eating anything..😱

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Deirdre I Hobson → Voyt Regnal
2 days ago

All the more reason to grow your own food from seeds. Not sure about fishing as there is the minute plastic debris in the oceans.

0 0 Reply • Share ›

Suzanne Giuriati Cerny → Voyt Regnal
2 days ago

I was growing vegetables for two years. My landlord now wants to make my garden in the back of his house into a "room" space. So much for love of money over health.

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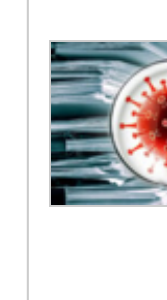

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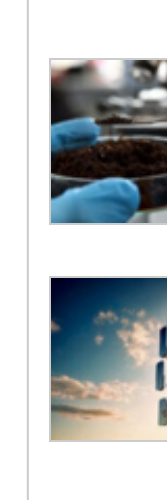

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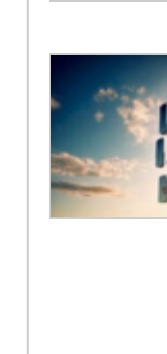

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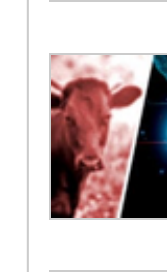

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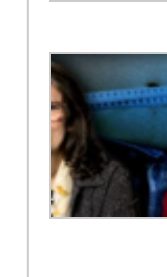

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